II. Amendment to the Claims:

Please amend the claims as set forth below. All amendments are supported by the specification, and thus, no new matter is presented.

1. (Previously Amended) A transmitter chip comprising:

a first series of phase shifters and at least one attenuator to control the scan angle and linear polarization of an RF signal;

a 90° phase shifter to control the circular polarization of an RF signal; and

a means for controlling the first series of phase shifters and the 90° phase shifter.

2. (Original) The transmitter chip of claim 1, wherein the means comprises a serial-to-parallel converter.

3. (Previously Amended) The transmitter chip of claim 1 wherein the first series of phase shifters comprises a 5.625° phase shifter, an 11.25° phase shifter, a 22.5° phase shifter, a 45° phase shifter, a 90° phase shifter, and a 180° phase shifter.

4. (Previously Amended) The transmitter chip of claim 1, wherein the first series of phase shifters and at least one attenuator comprise a 3-bit attenuator and three single stage amplifiers.

5. (Original) The transmitter chip of claim 1, wherein transistor-transistor logic (TTL) is used to control the polarization and scan angle of an RF signal.

6. (Previously Amended) The transmitter chip of claim 1, wherein the transmitter chip is capable of generating a signal with a linear polarization angle in the range of about 0° to 90°.

7. (Original) The transmitter chip of claim 1, wherein the transmitter chip is capable of generating a left-hand and right-hand circularly-polarized RF signal.

8. (Original) The transmitter chip of claim 1, wherein the transmitter chip is capable of generating a left-hand and right-hand circularly-polarized RF signal with very low axial ratios.

9. (Previously Amended) The transmitter chip of claim 1, wherein the transmitter chip is capable of generating a scan angle in the range of about -45° to 45°.

10. (Previously Amended) The transmitter chip of claim 1, wherein the transmitter chip is manufactured using a multifunction self-aligned gate process (MSAG).

11. (Cancelled)

12-21. (Withdrawn)

22. (Previously Amended) A transmitter chip comprising:

means for controlling the scan angle and the linear polarization of an RF signal, wherein said means comprises at least one attenuator for controlling the linear polarization of the RF signal; and

means for controlling the circular polarization of the RF signal.

23. (Previously Amended) The transmitter chip of claim 22, wherein the means for controlling the circular polarization of an RF signal can generate a left-hand circularly polarized signal and a right-hand circularly polarized signal.

24. (Previously Amended) The transmitter chip of clam 23, wherein the means for controlling the circular polarization of an RF signal can generate a left-hand circularly polarized signal and a right-hand circularly polarized signal with a very low axial ratio.

25. (Previously Added) The transmitter chip of claim 1, wherein the first series of phase shifters, the 90° phase shifter, and the means for controlling the first series of phase shifters and the 90° phase shifter are in a single transmitter chip.

26. (Previously Added) The transmitter chip of claim 25, wherein the single transmitter chip is a Gallium Arsenide monolithic transmitter chip.

27. (Previously Added) The transmitter chip of claim 26, wherein the first series of phase shifters further comprises a 3-bit attenuator and three single stage amplifiers and wherein the means comprises a serial-to-parallel converter.

28. (Previously Added) The transmitter chip of claim 25, wherein the single transmitter chip is coupled to an antenna configured to emit the RF signal.

29. (Previously Added) The method of using the transmitter chip of claim 1 to control the linear polarization, circular polarization, and scan angle of one or more RF signals.

30. (Currently Amended) A device comprising:

a single gallium arsenide transmitter chip comprising:

a first series of phase shifters; and

at least one attenuator;

wherein the first series of phase shifters and the at least one attenuator are jointly operative to control the linear polarization of an RF signal.

31. (Previously Added) The device of claim 30, further comprising:
a 90° phase shifter to control the circular polarization of an RF signal.

32. (Previously Added) The device of claim 30, further comprising:
a pair of 90° phase shifters to control the circular polarization of an RF signal;
a digital serial to parallel converter to control the pair of 90° phase shifters; and
a series of amplifiers that provide amplification to the RF signal,
wherein the pair of 90° phase shifters, the digital serial to parallel converter, and the series of amplifiers are on a Gallium Arsenide monolithic transmitter chip.

33. (Cancelled)

34. (Previously Added) The device of claim 30, further comprising a 90° phase shifter to control the circular polarization of the RF signal.

35. (Previously Added) The device of claim 30, wherein the first series of phase shifters further controls the scan angle of the RF signal.

36. (Previously Added) The device of claim 30, wherein the first series of phase shifters and the at least one attenuator control the linear polarization of the RF signal from a range of about 0° to 90°.

37. (Previously Added) The device of claim 30, further comprising a Wilkinson divider.

38. (Previously Added) The device of claim 30, wherein transmitter chip is capable of generating a signal with a linear polarization angle in the range of about 0° to 90°.

39. (New) A device comprising:

a transmitter chip comprising:

at least one attenuator coupled to a quadrature hybrid coupler, wherein the at least one attenuator and the quadrature hybrid coupler are jointly operative to control the linear polarization and scan angle of an RF signal.

40. (New) The device of claim 39, further comprising:

a series of phase shifters electronically coupled to the at least one attenuator, wherein the at least one attenuator, the quadrature hybrid coupler, and the at least one attenuator are collectively operative to control linear polarization, circular polarization, and scan angle.

41. (New) The device of claim 39, wherein the quadrature hybrid coupler comprises a Lange coupler.

42. (New) The device of claim 39, wherein the transmitter chip is a single gallium arsenide chip.

43. (New) The device of claim 42, further comprising a serial-to-parallel converter.

44. (New) The transmitter chip of claim 22, wherein the means for controlling the scan angle and the linear polarization further comprises a Lange coupler.

45. (New) The transmitter chip of claim 22, wherein the means for controlling the circular polarization comprises the at least one attenuator.